

FIG. 1A

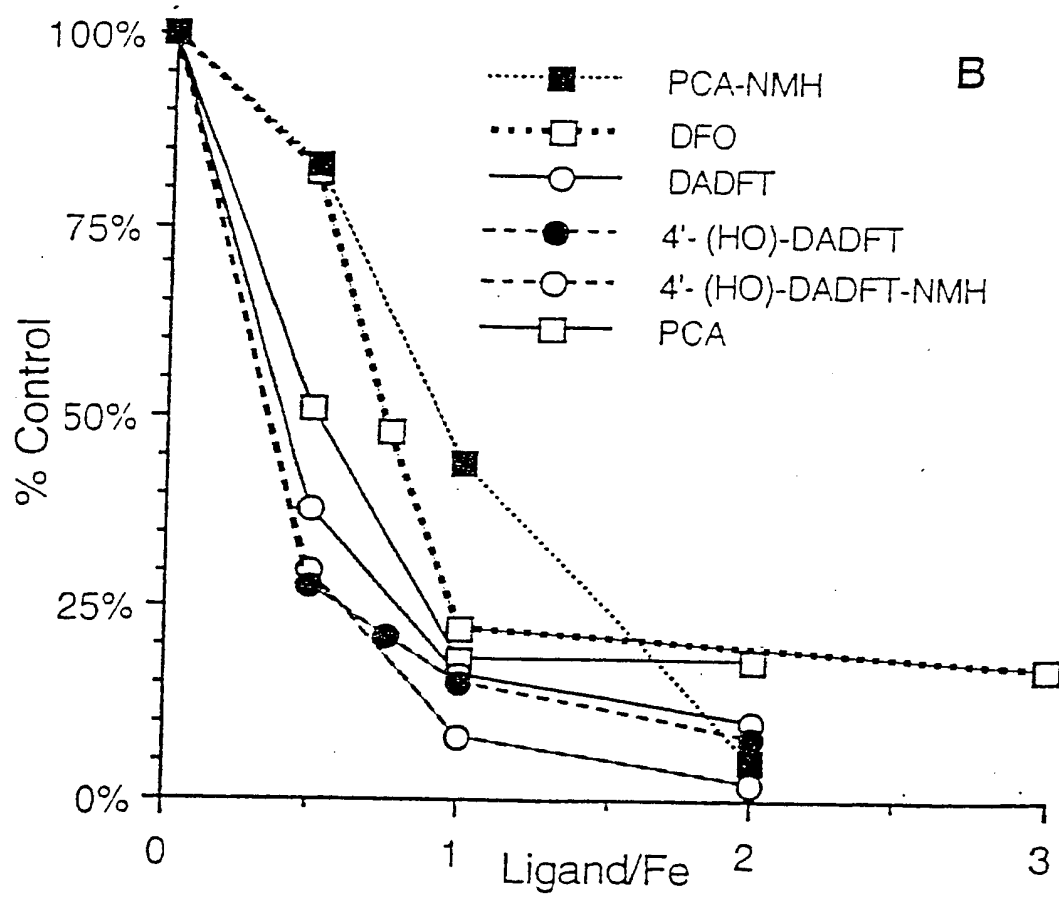


FIG. 1B

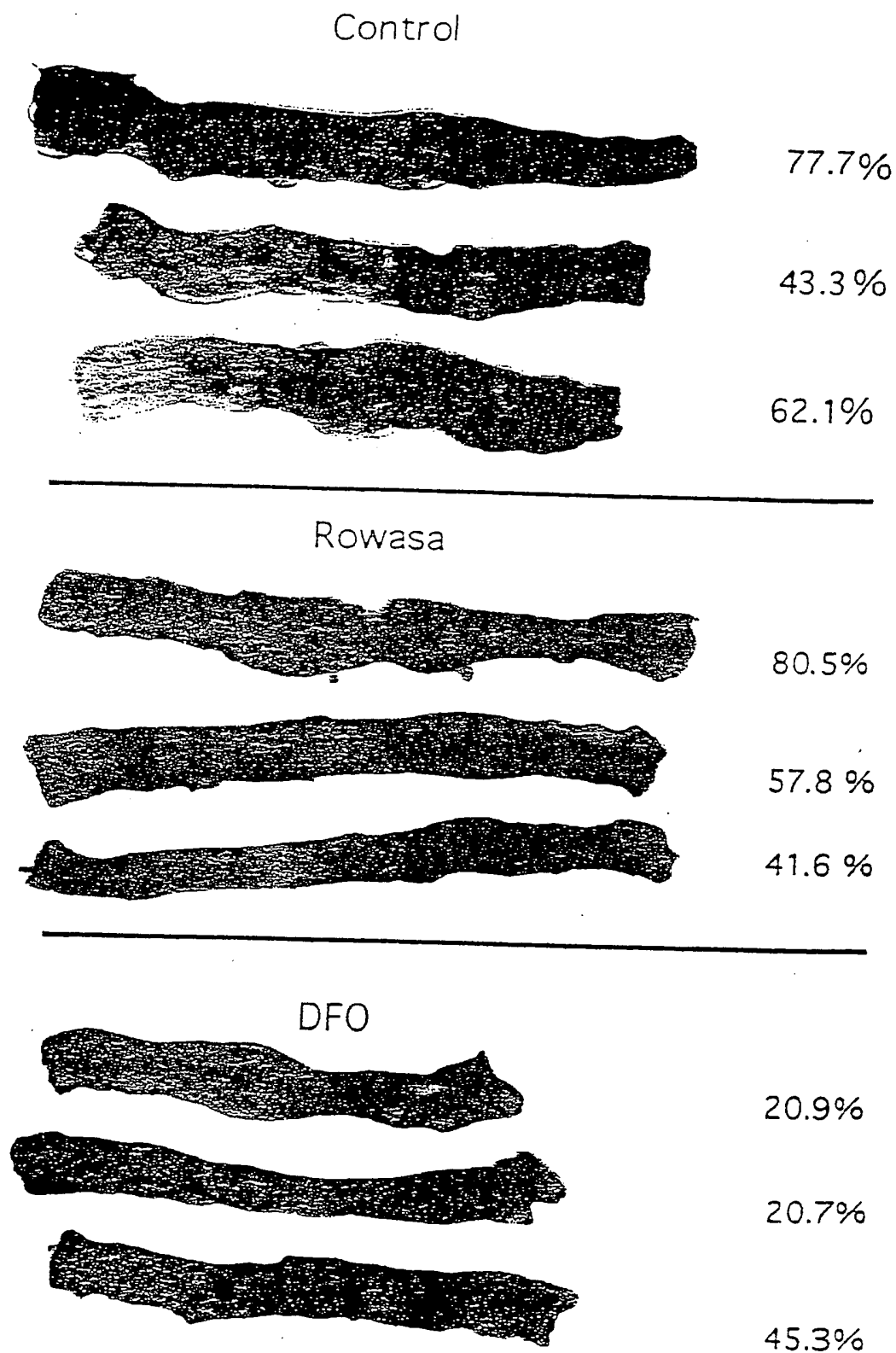


FIG. 2

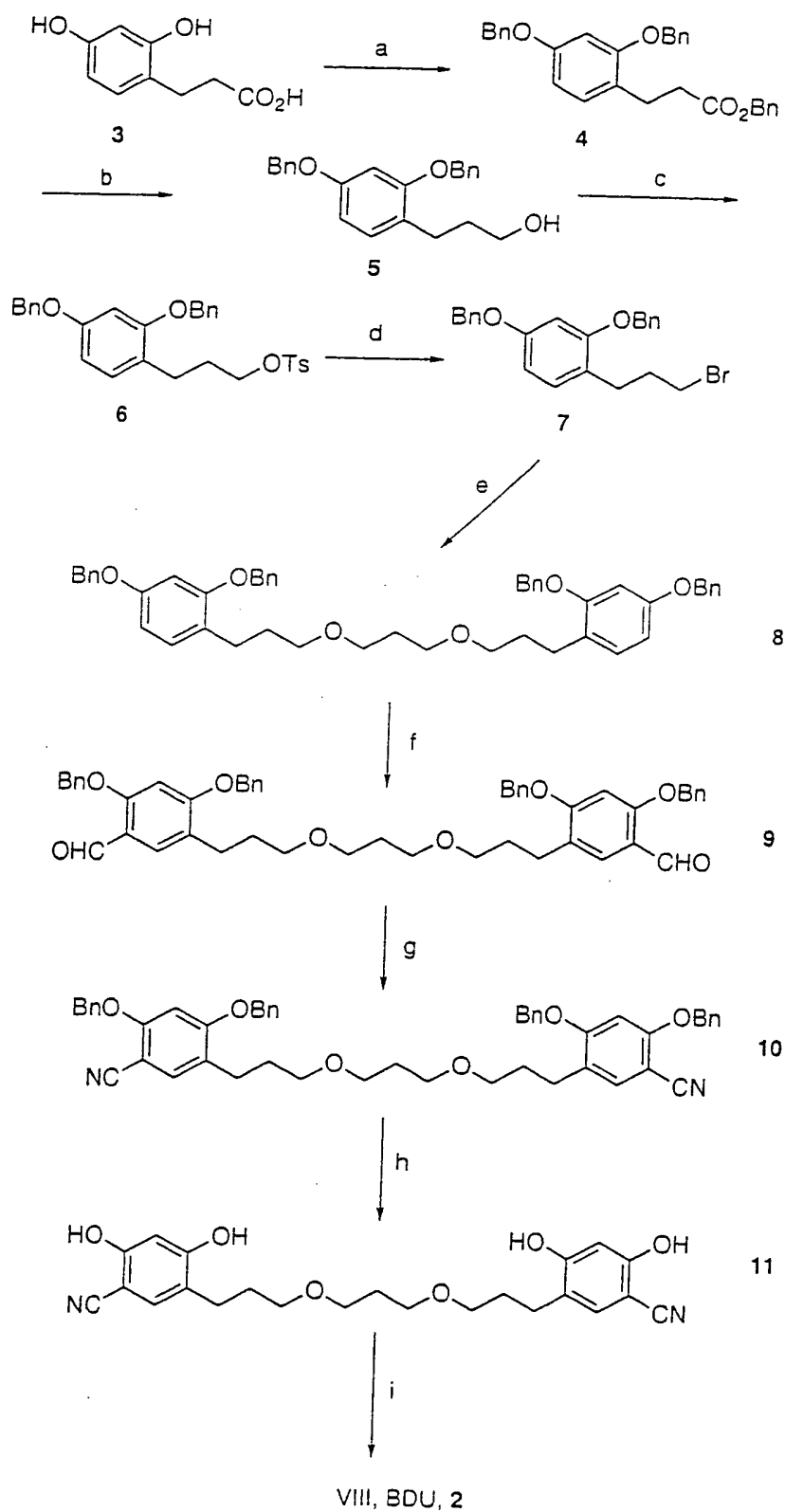


FIG. 3

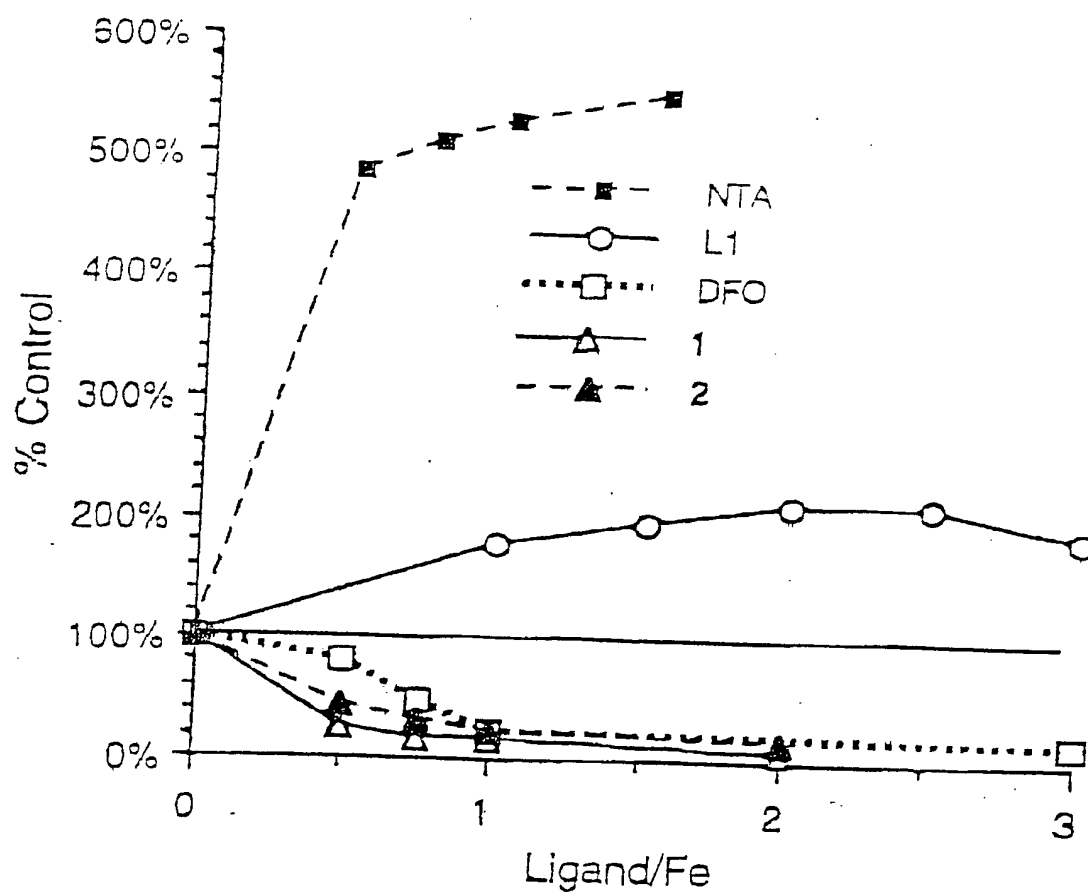


FIG. 4

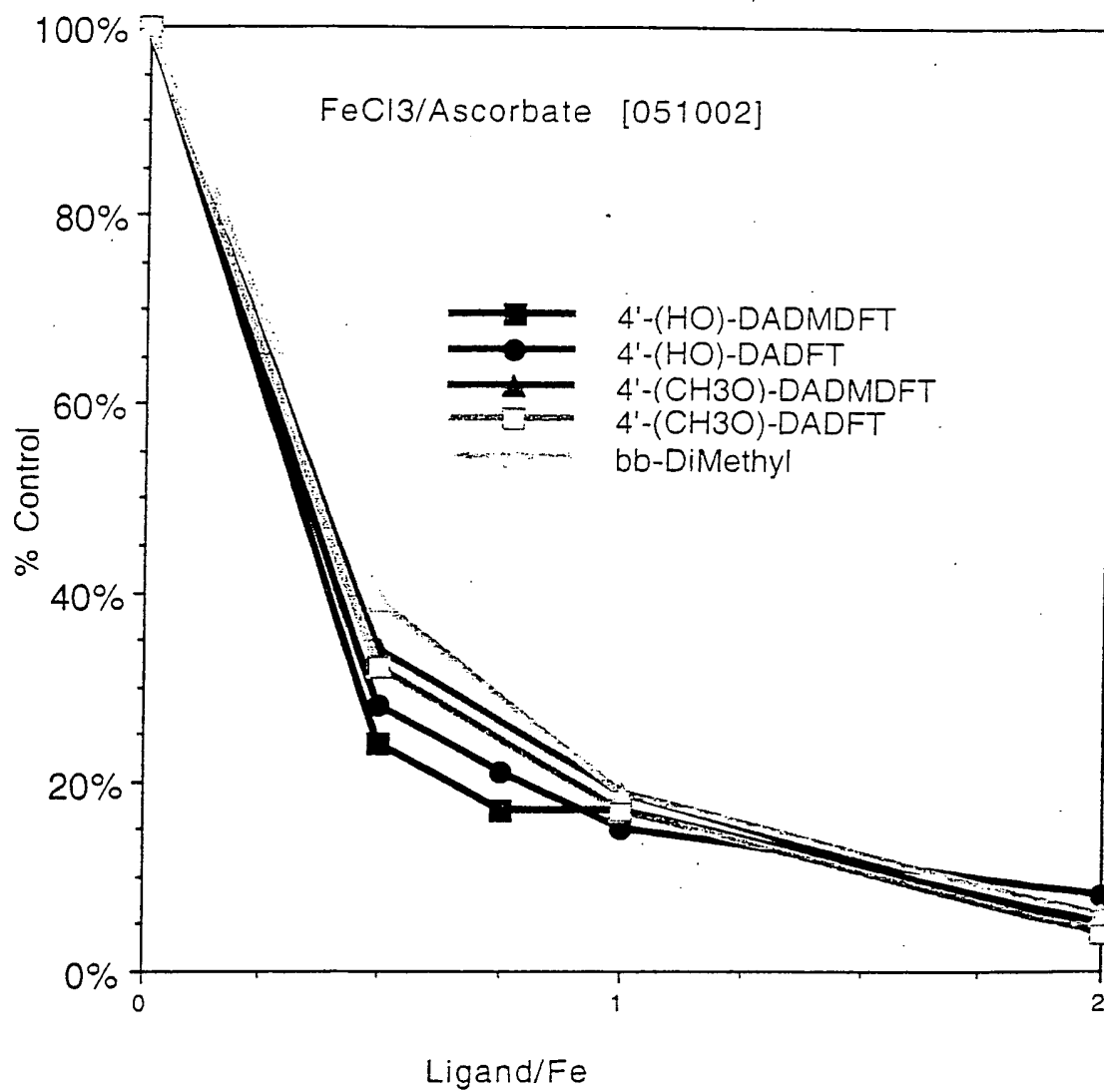


FIG. 5

<i>Compound</i>	<i>Slope x 10<sup>3</sup> OD units/<math>\mu</math>M*</i>
DFT	-0.9
DMDFT	-1.3
PCA	-3.3
DADFT	-25.1
DADMDFT	-28.1
5-ASA	-34.4
PCA-NMH	-34.6
Trolox	-36.6
DMDFT-NMH	-47.4
L1	-52.9
4'-(HO)-DADMDFT	-101.6
4'-(HO)-DADFT	-105.6
4'-(HO)-DADMDFT-NMH	-135.5
DFO	-136.8
4'-(HO)-DADFT-NMH	-141.4

\*The slope was derived from  $A_{734}$  vs time data over a six-minute reaction period between the chelator of interest and the 2,2'-azinobis(3-ethylbenzothiazoline-6-sulfonic acid) radical cation (ABTS<sup>•+</sup>), which was formed from the reaction between ABTS and persulfate. A negative slope represents a decrease in the amount of highly colored radical cation over the time interval. Trolox, an analog of Vitamin E, served as a positive control.

FIG. 6

Compound*	N	Damage (%) †	P vs control‡	P vs parent§	MPO activity¶	P vs control‡	P vs parent§
Control (no acid)	10	4 ± 5	<0.001	N/A**	4494 ± 2254	<0.001	N/A
Control 4% acetic acid	13	65 ± 18	N/A	N/A	91479 ± 84927	N/A	N/A
DMDFT-NMH	10	22 ± 17	<0.001	<0.001	14406 ± 8683	<0.005	<0.01
DMDFT	10	61 ± 15	N.S. ††	N/A	39229 ± 27109	<0.05	N/A
(DMDFT-NMH) <sub>2</sub> /Fe	9	45 ± 24	<0.05	<0.02‡‡	54370 ± 18749	N.S.	<0.001‡‡
PCA	10	44 ± 11	<0.001	N/A	29942 ± 11255	<0.02	N/A
PCA-NMH	9	38 ± 18	<0.002	N.S.	23642 ± 14341	<0.01	N.S.
4'-(HO)-DADMDFT	10	57 ± 15	N.S.	N/A	56466 ± 52617	N.S.	N/A
4'-(HO)-DADMDFT-NMH	10	39 ± 11	<0.001	<0.005	18426 ± 20930	<0.005	<0.05
DFO	9	39 ± 15	<0.001	N/A	20049 ± 17314	<0.01	N/A
4'-(HO)-DADFT	9	62 ± 10	N.S.	N/A	64192 ± 30802	N.S.	N/A
4'-(HO)-DADFT-NMH	8	46 ± 23	<0.05	=0.05	41021 ± 35525	<0.05	N.S.
Rowasa®§§	9	62 ± 19	N.S.	N/A	51805 ± 38165	N.S.	N/A

\*All chelators (2 ml) were administered intracolonicly at a dose of 650  $\mu\text{mol kg}^{-1}$ . Rowasa® (2 ml, 66.7 mg  $\text{ml}^{-1}$  5-ASA) was given intracolonicly at a dose of 2318  $\mu\text{mol kg}^{-1}$ .

†Percent damage in scanned images of the colons was measured with the aid of the Adobe Photoshop program; the mean percentage of the image scored as "damaged" (as detailed in the Experimental Section)  $\pm$  standard deviation is reported.

‡P versus 4% acetic acid control animals.

§P versus animals treated with the respective carboxylic acid.

¶ Myeloperoxidase (MPO) activity expressed as  $\text{mAU min}^{-1} \text{g}$  of colonic tissue<sup>-1</sup>, mean  $\pm$  standard deviation.

\*\*N/A, not applicable.

††N.S., not significant ( $P > 0.05$ )

‡‡In this instance, P versus animals treated with free, uncomplexed DMDFT-N.

§§The pharmaceutical preparation, which contains 5-ASA (66.7 mg  $\text{ml}^{-1}$ ), was tested in the rodents.

FIG. 7



Compound	slope x 10 <sup>3</sup> OD units/ $\mu$ M <sup>a</sup>
Trolox	-37 <sup>b</sup>
L1	-53 <sup>b</sup>
4'-(OH)-DADMDF	-102 <sup>b</sup>
BDU	-136
DFO	-137 <sup>b</sup>

<sup>a</sup> The slope was derived from  $A_{734}$  vs time data over a 6-min reaction period between the chelator of interest and the 2,2'-azinobis(3-ethylbenzothiazoline-6-sulfonic acid) radical cation (ABTS<sup>•+</sup>), which was formed from the reaction between ABTS and persulfate. A negative slope represents a decrease in the amount of highly colored radical cation over the time interval. Trolox, an analogue of vitamin E, served as a positive control.

<sup>b</sup> Bergeron, R.J.; Wiegand, J.; Weimar, W.R.; Nguyen, J.N.; Sninsky, C.A., unpublished results.

FIG. 8

compound	slope $\times 10^3$ OD units/ $\mu\text{M}^n$
4'-(CH <sub>3</sub> O)-DADMDFT	-33
4'-(CH <sub>3</sub> O)-DADFT	-36
Trolox	-37
$\beta,\beta$ -Dimethyl	-70
4'-(HO)-DADMDFT	-102
4'-(HO)-DADFT	-106

<sup>a</sup> The slope was derived from  $A_{734}$  vs time data over a 6-min reaction period between the chelator of interest and the 2,2'-azinobis(3-ethylbenzothiazoline-6-sulfonic acid) radical cation (ABTS<sup>•+</sup>), which was formed from the reaction between ABTS and persulfate. A negative slope represents a decrease in the amount of highly colored radical cation over the time interval from an initial OD<sub>470</sub> of 1.000. Trolox, an analogue of vitamin E, served as a positive control.

FIG. 9